19. Give the preparation and uses of the following:

(a) Polystyrene

(b) Buna-S

(c) Silicone rubber.

20. What are the function of filers, dyes and plasticizers in the plastic industry?

Shanmuga Industries Arts & Science College
T.V.Malai

APRIL/MAY 2025

GOCH44A/DOCH44A — POLYMER AND PLASTICS

Time : Three hours Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer ALL the questions.

1. Define the term polymers.
2. Write the condensation polymers reaction:
3. What are cross linked polymers?
4. Define glass transition temperature.
5. What is meant by homopolymers?
6. Define copolymerisation.
7. Give any two properties of Freons.
8. What is expansion of SBR?
9. Mention any two fillers used in polymers.
10. What are lubricants? Give example.

SECTION B — (5 × 5 = 25 marks)

Answer ALL the questions.

11. (a) Describe the classification of polymers.

Or

(b) Discuss the ring opening mechanism for polymerization of polymers.

12. (a) Illustrate the difference between linear and cross-linked polymer.

Or

(b) Discuss the importance of glass transition temperature.

13. (a) Explain number average and weight average molecular weights of polymers.

Or

(b) Describe the Osmometry method of determining molecular weight of macromolecules.

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14. (a) Explain the preparation and uses of PTFE and PVC.

Or

(b) Write the preparation and applications of Thiocol and polyurethane.

15. (a) Write notes on Plastics and Resins.

Or

(b) Write the difference between Thermo plastics and Thermo setting resins.

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. (a) Differentiate between the natural and synthetic polymers.

(b) Describe the mechanism of coordination polymerization.

17. Discuss the stereochemistry of polymers.

18. Explain the examples:

(a) Homo polymer and co polymer,

(b) Block and Graft polymer.